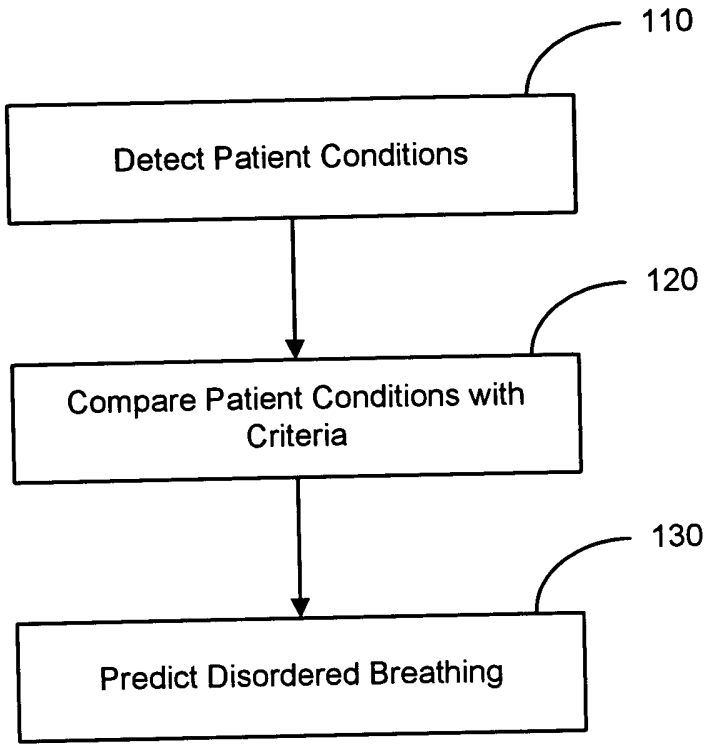
110
Detect Patient Conditions
120
Compare Patient Conditions with Criteria
130
Predict Disordered Breathing

Figure 1

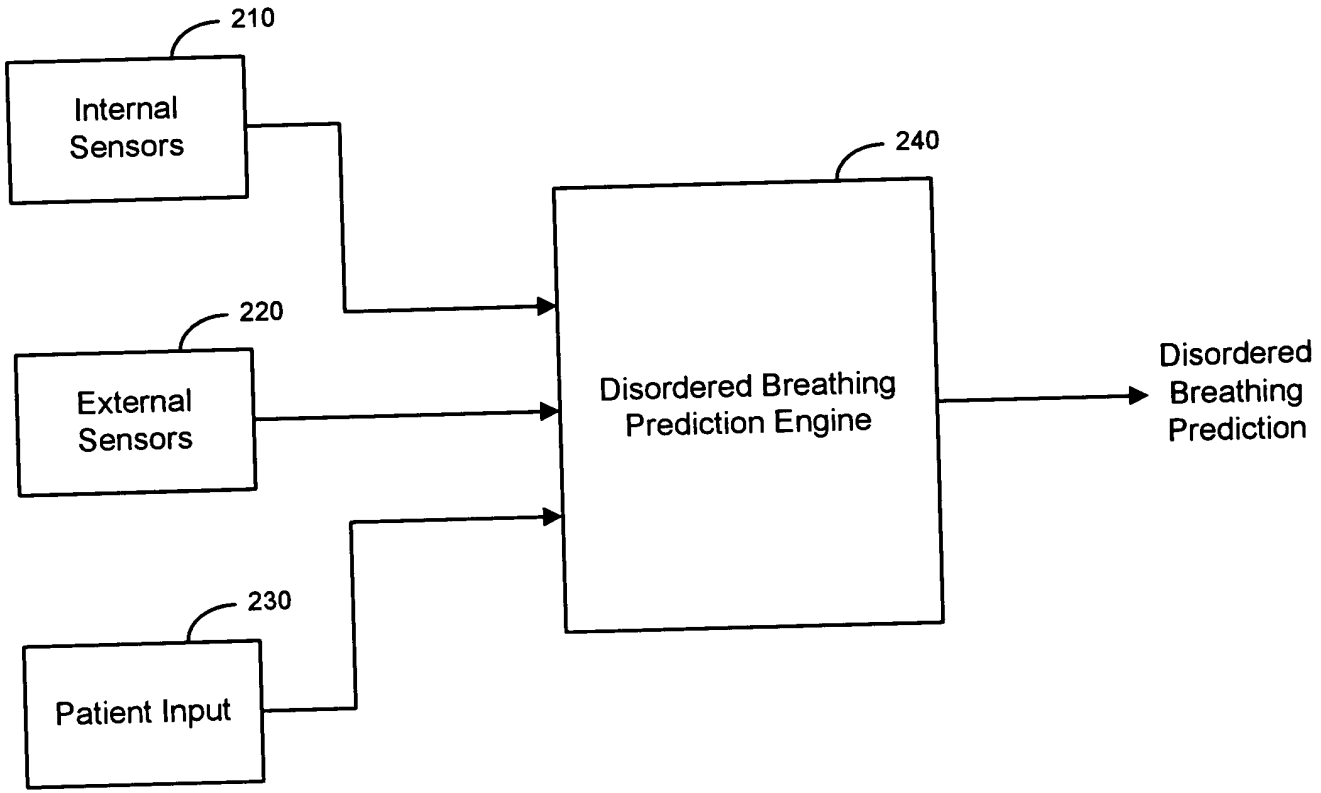
210
Internal Sensors
220
External Sensors
230
Patient Input
240
Disordered Breathing Prediction Engine
Disordered Breathing Prediction

Figure 2

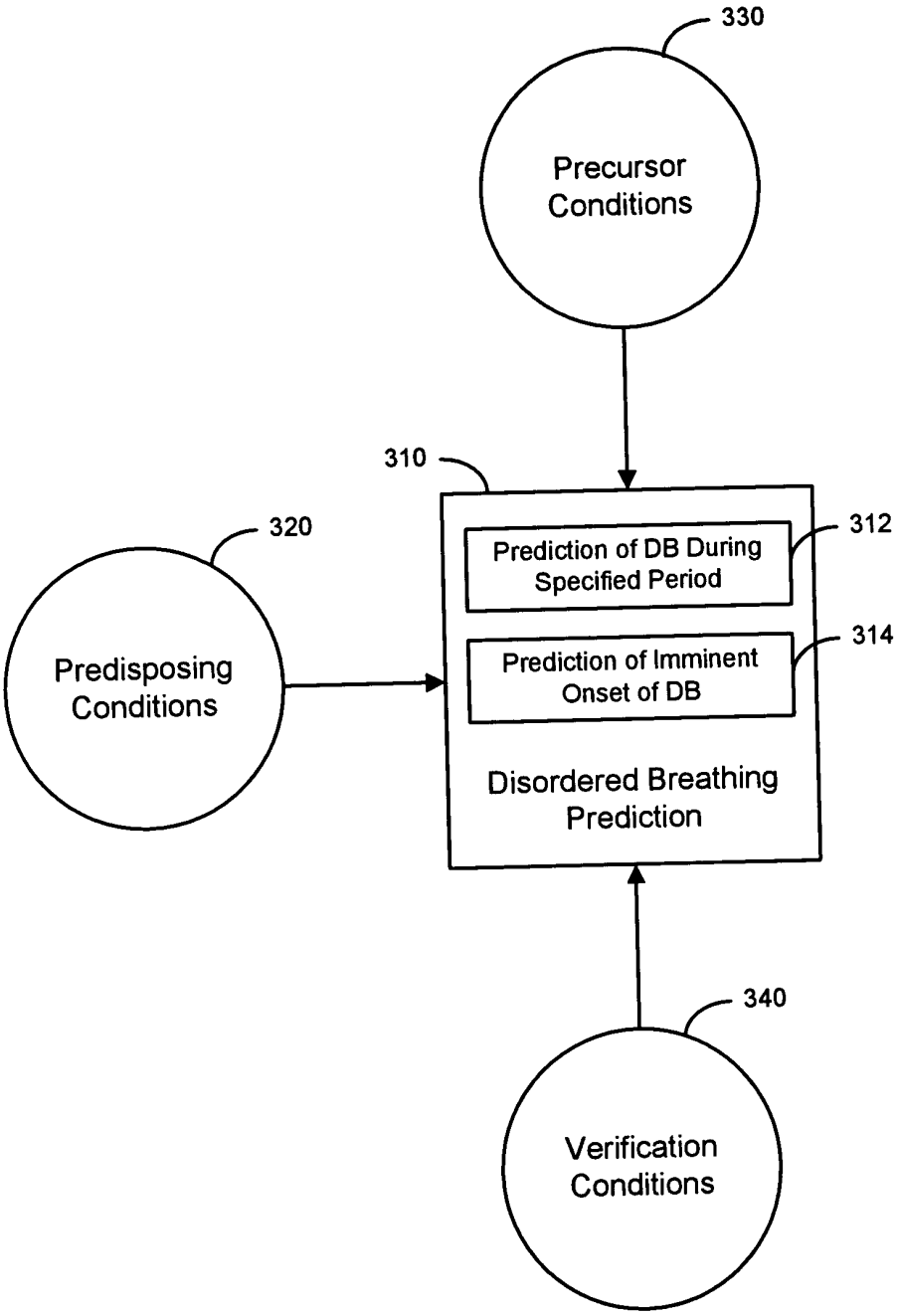
330
Precursor Conditions
310
320
Predisposing Conditions
Prediction of DB During Specified Period
312
Prediction of Imminent Onset of DB
314
Disordered Breathing Prediction
340
Verification Conditions

Figure 3

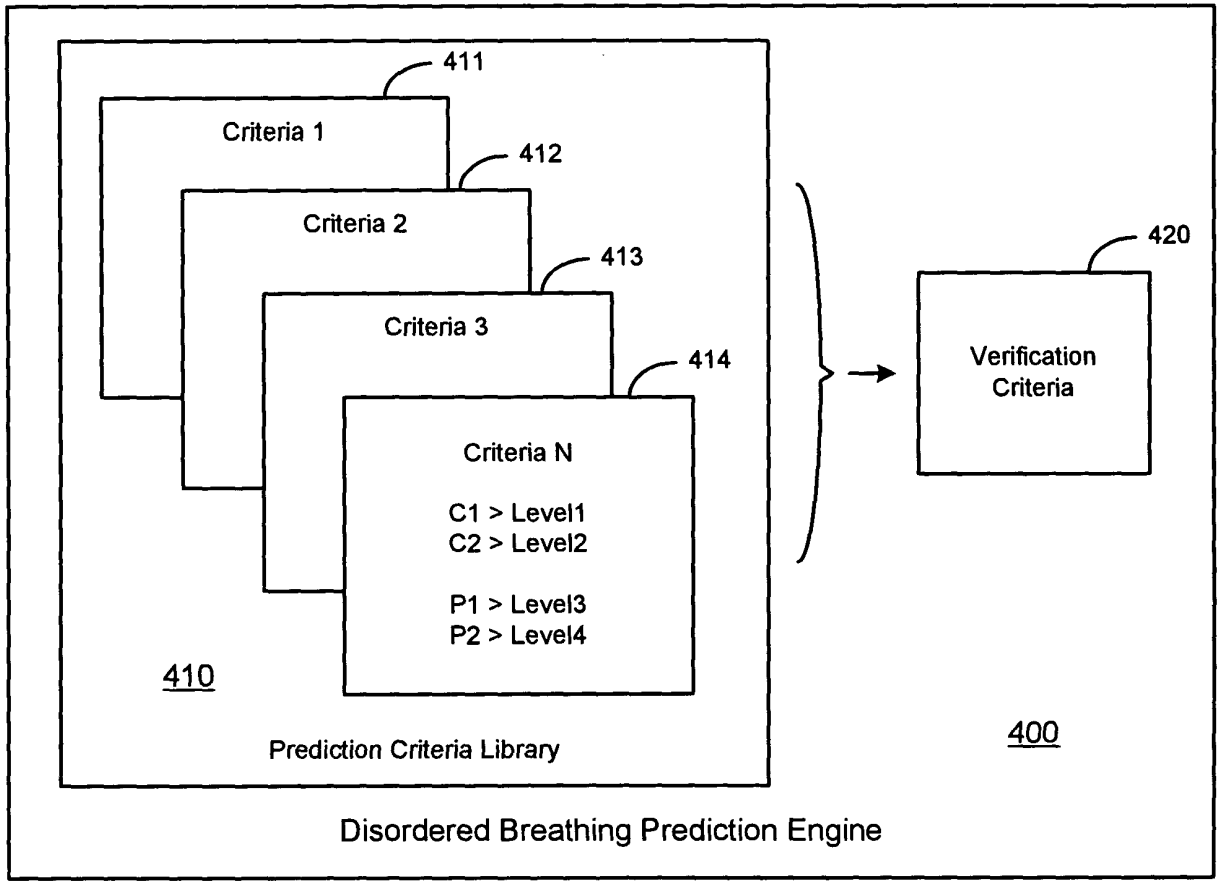
411
Criteria 1
412
Criteria 2
413
Criteria 3
414
Criteria N
C1 > Level1
C2 > Level2
P1 > Level3
P2 > Level4
410
Prediction Criteria Library
420
Verification Criteria
400
Disordered Breathing Prediction Engine

Figure 4

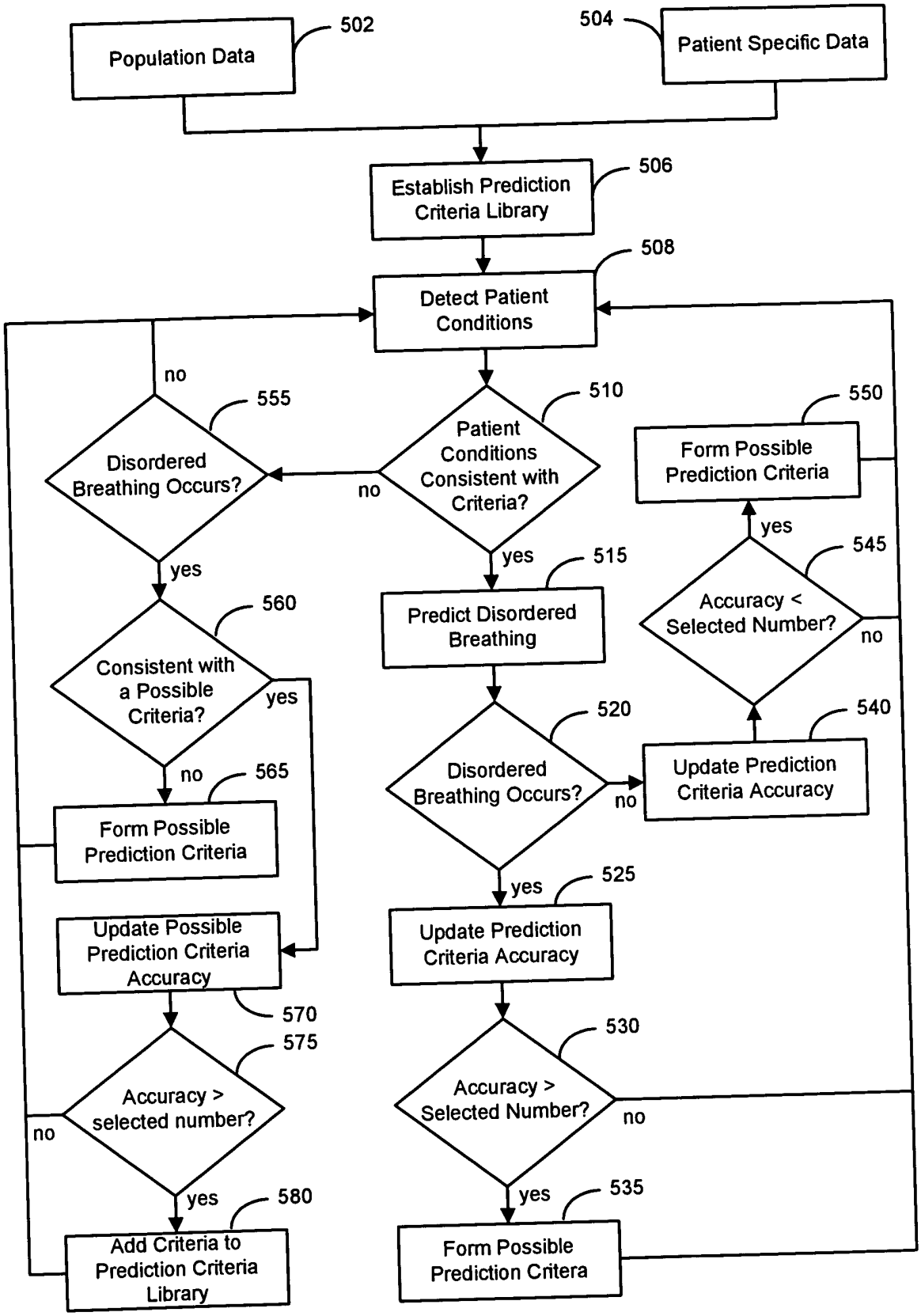
Population Data
502
Patient Specific Data
504
Establish Prediction Criteria Library
506
Detect Patient Conditions
508
Patient Conditions Consistent with Criteria?
510
no
yes
Disordered Breathing Occurs?
555
no
yes
Consistent with a Possible Criteria?
560
yes
no
Form Possible Prediction Criteria
565
Update Possible Prediction Criteria Accuracy
570
Accuracy > selected number?
575
no
yes
Add Criteria to Prediction Criteria Library
580
Predict Disordered Breathing
515
Disordered Breathing Occurs?
520
no
yes
Update Prediction Criteria Accuracy
525
Accuracy > Selected Number?
530
no
yes
Form Possible Prediction Critera
535
Form Possible Prediction Criteria
550
yes
Accuracy < Selected Number?
545
no
Update Prediction Criteria Accuracy
540

Figure 5

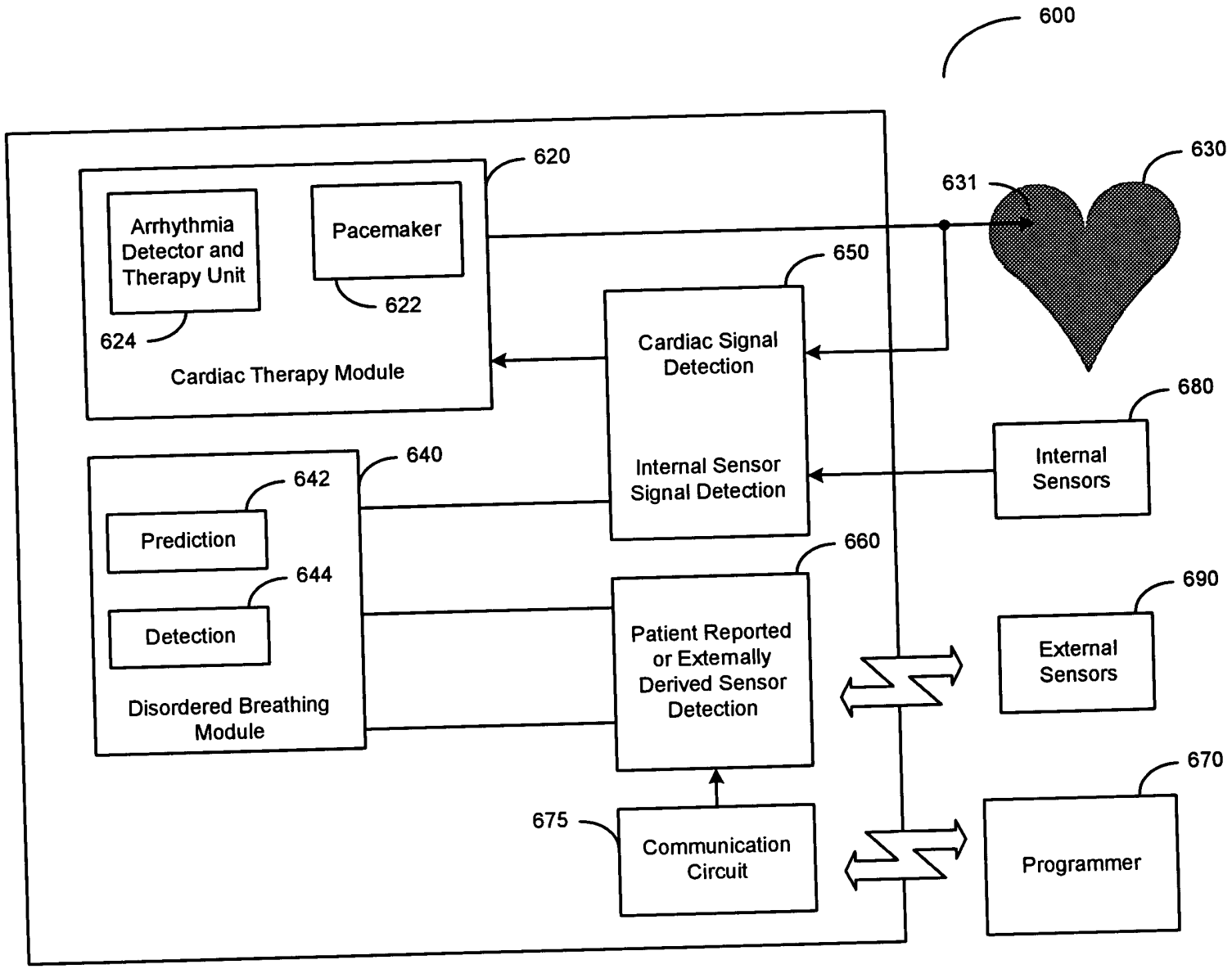
600
620
630
631
Arrhythmia Detector and Therapy Unit
Pacemaker
622
624
Cardiac Therapy Module
650
Cardiac Signal Detection
Internal Sensor Signal Detection
680
Internal Sensors
640
642
Prediction
644
Detection
Disordered Breathing Module
660
Patient Reported or Externally Derived Sensor Detection
690
External Sensors
675
Communication Circuit
670
Programmer

Figure 6

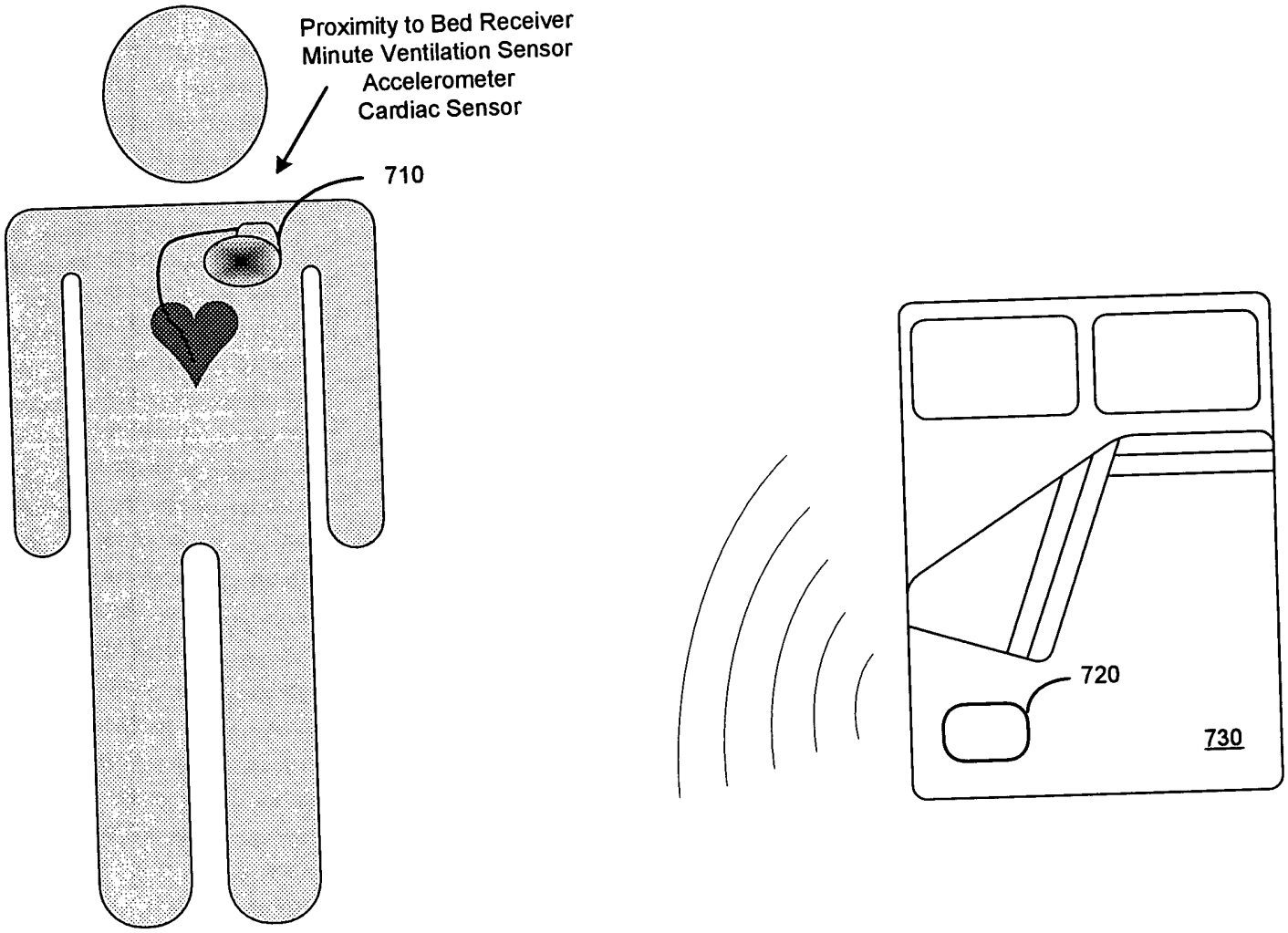
Proximity to Bed Receiver
Minute Ventilation Sensor
Accelerometer
Cardiac Sensor
710
720
730

Figure 7

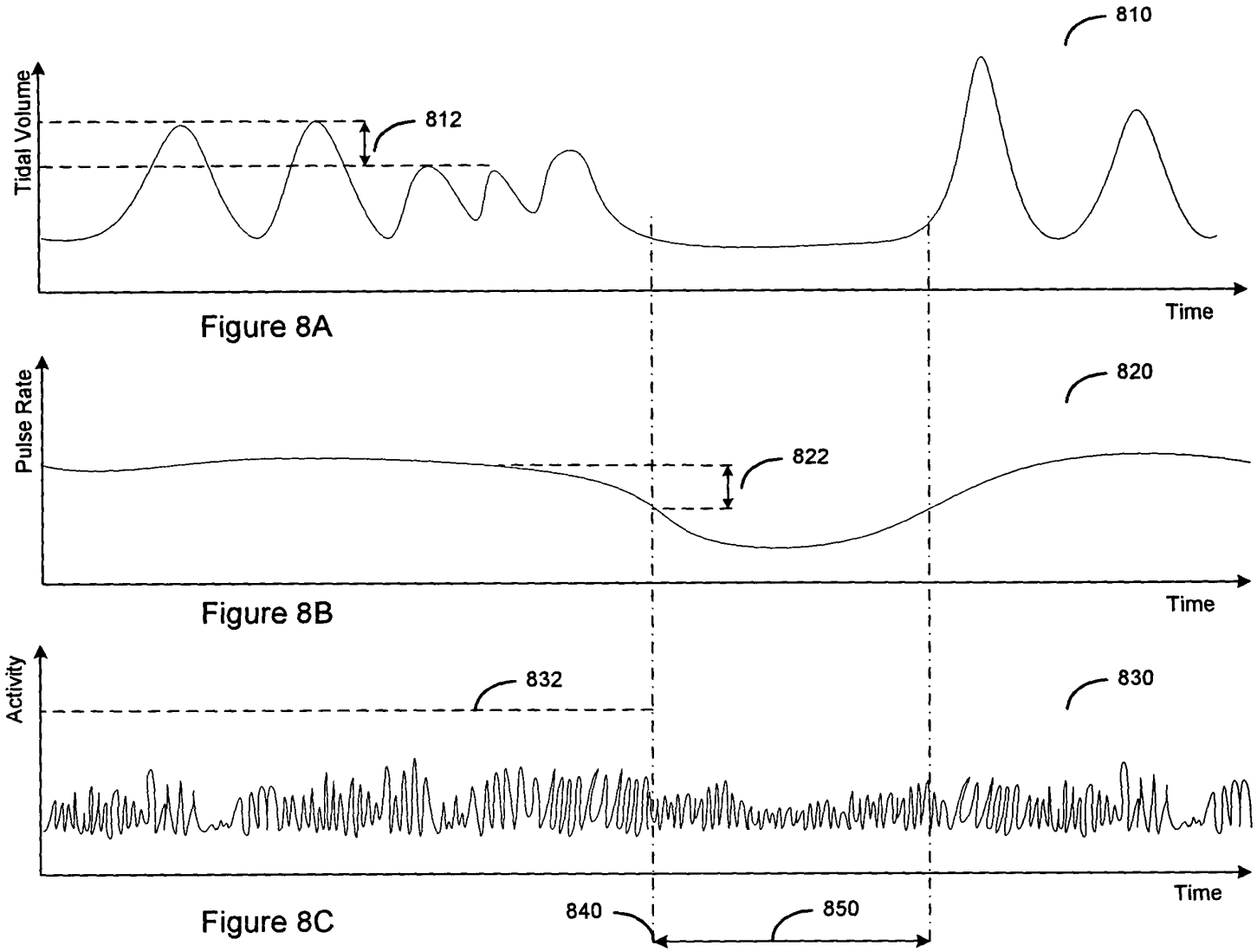

Figure 8A

Figure 8B

Figure 8C

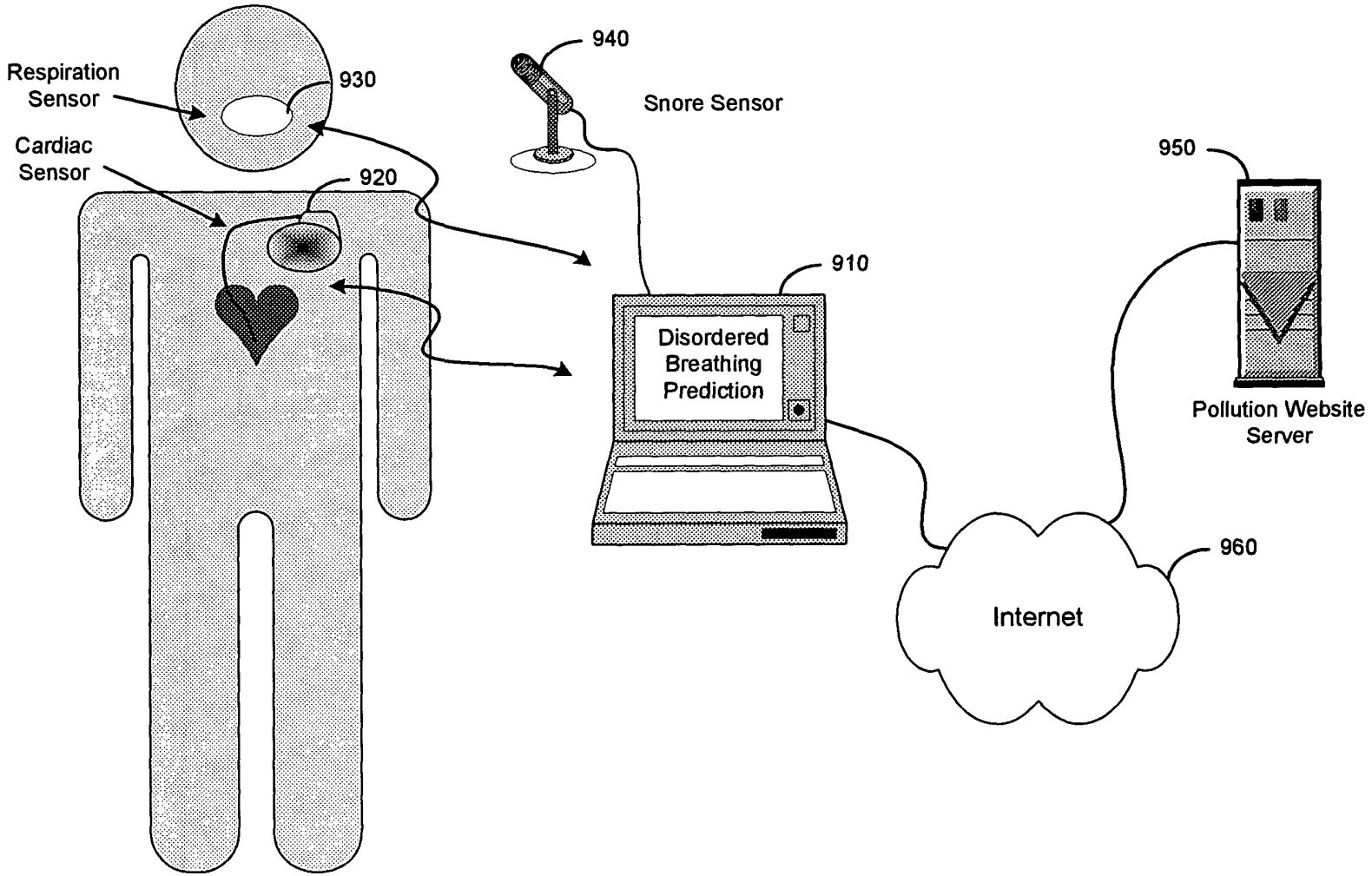
Respiration Sensor
930
940
Snore Sensor
Cardiac Sensor
920
950
910
Disordered Breathing Prediction
Pollution Website Server
960
Internet

Figure 9